

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

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1. An absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in one or more bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

2. The composite of Claim 1 wherein the distribution zones are substantially free of absorbent material.

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3. The composite of Claim 1 wherein the bands are continuous along the composite's length in the machine direction.

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4. The composite of Claim 1 wherein the bands are substantially parallel.

5. The composite of Claim 1 wherein the bands are discontinuous along the composite's length in the machine direction.

6. The composite of Claim 1 wherein the bands further comprise fibrous material.

7. The composite of Claim 6 wherein the fibrous material comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

8. The composite of Claim 1 wherein the fibrous matrix comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

9. The composite of Claim 8 wherein the resilient fibers are selected from the group consisting of chemically stiffened fibers, anfractuous fibers, chemithermomechanical pulp fibers, prehydrolyzed kraft pulp fibers, synthetic fibers, and mixtures thereof.

10. The composite of Claim 9 wherein the chemically stiffened fibers comprise crosslinked cellulosic fibers.

11. The composite of Claim 10 wherein the crosslinked cellulosic fibers are crosslinked with a crosslinking agent selected from the group consisting of urea-based and polycarboxylic acid crosslinking agents.

12. The composite of Claim 9 wherein the synthetic fibers are selected from the group consisting of polyolefin, polyester, polyamide, and thermobondable bicomponent fibers.

13. The composite of Claim 12 wherein the polyester fibers are polyethylene terephthalate fibers.

14. The composite of Claim 8 wherein the matrix fibers comprise cellulosic fibers.

15. The composite of Claim 14 wherein the cellulosic fibers comprise fibers selected from the group consisting of wood pulp fibers, cotton linters, cotton fibers, hemp fibers, and mixtures thereof.

16. The composite of Claim 8 wherein the resilient fibers are present in the composite in an amount from about 10 to about 60 percent by weight of the total composite.

17. The composite of Claim 8 wherein the matrix fibers are present in the composite in an amount from about 10 to about 50 percent by weight of the total composite.

18. The composite of Claim 1 wherein the absorbent material is a superabsorbent material.

19. The composite of Claim 18 wherein the superabsorbent material is selected from the group consisting of superabsorbent particles and superabsorbent fibers.

20. The composite of Claim 1 wherein the absorbent material is present in an amount from about 0.1 to about 80 percent by weight of the total composite.

21. The composite of Claim 1 wherein the absorbent material is present in about 40 percent by weight of the total composite.

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22. The composite of Claim 1 wherein the absorbent material absorbs from about 5 to about 100 times its weight in 0.9 percent saline solution.

23. The composite of Claim 1 further comprising a wet strength agent.

24. The composite of Claim 23 wherein the wet strength agent is a resin selected from the group consisting of polyamide-epichlorohydrin and polyacrylamide resins.

25. The composite of Claim 23 wherein the wet strength agent is present in the composite in an amount from about 0.01 to about 2 percent by weight of the total composite.

26. The composite of Claim 23 wherein the wet strength agent is present in the composite in about 0.25 percent by weight of the total composite.

27. The composite of Claim 1 having a basis weight of from about 50 to about 1000 g/m².

28. The composite of Claim 1 having a density of from about 0.02 to about 0.7 g/cm³.

29. The composite of Claim 1 wherein the fibrous matrix comprises crosslinked cellulosic fibers present in about 45 percent by weight based on the total weight of the composite.

30. The composite of Claim 1 wherein the fibrous matrix comprises wood pulp fibers present in about 15 percent by weight based on the total weight of the composite.

31. The composite of Claim 1 wherein the fibrous matrix further comprises absorbent material.

32. The composite of Claim 31 wherein the absorbent material comprises superabsorbent material.

33. A wetlaid absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in

one or more bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

34. A foam-formed absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in one or more bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

35. An absorbent article comprising an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

36. An absorbent article comprising a wetlaid absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

37. An absorbent article comprising a foam-formed absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

38. An absorbent article comprising:
liquid pervious facing sheet;
a storage layer comprising an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers;
and
a liquid impervious backing sheet.

39. An absorbent article comprising:
a liquid pervious facing sheet;
an acquisition layer for rapidly acquiring and distributing liquid;

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a storage layer comprising an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers; and

a liquid impervious backing sheet.

40. An absorbent article comprising:

a liquid pervious facing sheet;

an acquisition layer for rapidly acquiring and distributing liquid;

a storage layer comprising an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers;

an intermediate layer interposed between the acquisition layer and the storage layer; and

a liquid impervious backing sheet.

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41. The absorbent article of Claim 40 wherein the intermediate layer is selected from the group consisting of a liquid pervious tissue and a distribution layer.

42. The absorbent article of Claim 38 wherein the article is a feminine care product.

43. The absorbent article of Claim 42 wherein the top sheet is joined to the backing sheet.

44. The absorbent article of Claim 39 wherein the article is a diaper.

45. The absorbent article of Claim 44 further comprising leg gathers.

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46. An absorbent article comprising:

a liquid pervious facing sheet;

an acquisition layer for acquiring and distributing liquid;

a storage layer; and

a liquid impervious backing sheet;

wherein the acquisition layer comprises an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

47. The absorbent article of Claim 46 wherein the acquisition layer has a top surface area less than the top surface area of the storage core.

48. The absorbent article of Claim 46 wherein the acquisition layer has a top surface area about equal to the top surface area of the storage core.

49. The absorbent article of Claim 46 wherein the storage layer comprises absorbent material.

50. The absorbent article of Claim 46 wherein the storage layer comprises an absorbent composite comprising a fibrous matrix and absorbent material, wherein the absorbent material is present in the fibrous matrix in bands, wherein the bands define liquid distribution zones in the fibrous matrix, and wherein the fibrous matrix comprises bonded cellulosic fibers.

51. The absorbent article of Claim 46 wherein the article is a diaper.

52. The absorbent article of Claim 46 further comprising leg gathers.

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